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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yasushi Sato

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EXAMINER

LERNER, MARTIN

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/559,571	SATO, YASUSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	MARTIN LERNER	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 42 to 53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50 to 53 is/are allowed.
- 6) ☒ Claim(s) 42 to 49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 44 to 45 and 48 to 49 are objected to because of the following informalities:

Claim 44 sets forth the limitation of “the reaction means”, which lacks any antecedent basis from the claims on which it depends. It appears that “the reaction means” should be “the creation means”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 42 to 49 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 42 to 49 are rejected under 35 U.S.C. §101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory “process” under 35 U.S.C. §101 must (1) be

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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ties to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claims recite a series of steps or acts to be performed, the claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claims 42 to 49 fail to meet the requirements of the 'machine or transformation test'. The USPTO has recently introduced a policy of rejecting claims directed to a device, system, or apparatus, for non-statutory subject matter when the underlying claims are actually method claims that fail to meet the requirements of the 'machine or transformation test'. Here, although the claims are ostensibly directed to a device, the underlying claims are actually method steps, *e.g.*, "cadence prediction means . . . to predict the cadence", "selecting means for selecting", "creation means for . . . creating data", "utterance speed conversion means for . . . acquiring utterance speed data". These elements are only 'black boxes' of software routines, and do not represent distinct physical structures apart from a general purpose computer processor. The "means" limitations do not set forth any structure, and so are equivalent to method steps. Although these claims set forth storage means for "voice unit storage means" and "phoneme storage means", these storage means do not represent a 'machine' for purposes of the 'machine or transformation test' because they are only 'abstract' data structures providing insignificant pre-solution activity. Nothing else in these claims provides any 'machine' for performing the functions of the speech synthesis device.

Moreover, all of the elements of the claims are 'abstract' entities of information, *e.g.*, voice unit data, phoneme data, a sentence, sentence information, cadence, predetermined conditions, a correlation, converted data, phoneme fragments, utterance speech data, and a reading. None of these 'abstract' elements of the claims is an 'article or material' that can be subjected to a transformation so as to satisfy the requirements of the 'machine or transformation test'.

The USPTO continues to maintain that the 'machine or transformation test' is a useful tool for determining whether a claim is 'abstract' for purposes of statutory subject matter. Moreover, the USPTO takes the position that the recent decision of the Supreme Court in *Bilski* did not expressly overrule the validity of the 'machine or transformation test', but only held that the test should be non-exclusive for determining whether method claims are statutory.

Applicants can overcome the rejection for non-statutory subject matter under 35 U.S.C. §101 by incorporating a non-preambular limitation into at least one of the means of the device – preferably the selecting means, missing part cadence prediction means, and missing part synthesis means – directed to “using a processor” as set forth by the Specification, Page 13, Line 26 to Page 14, Line 3. This is in accordance with fairly recent 'best practices' training of the USPTO that can be found at the following location: [http://www.uspto.gov/patents/law/exam/101\\_interim\\_training.pdf](http://www.uspto.gov/patents/law/exam/101_interim_training.pdf). See Process Example: Claim 4 and Process Example: Claim 5 on Pages 14 and 15.

***Allowable Subject Matter***

4. Claims 50 to 53 are allowed.
5. Claims 42 to 49 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §101, set forth in this Office Action.
6. The following is a statement of reasons for the indication of allowable subject matter:

Independent claims 42, 50, and 52 set forth the limitations of a speech synthesis device, method, and computer readable medium for selecting voice data satisfying predetermined conditions for matching a reading composing a sentence with a cadence prediction that has a correlation greater than a predetermined amount, and converting acquired phoneme data for missing part synthesis when a voice unit does not satisfy the predetermined condition. The prior art of record does not disclose or reasonably suggest these limitations. Mainly, the prior art of record does not expressly disclose 'cadence prediction'. Although prosody is a broad term that encompasses 'cadence', the terms are not strictly equivalent. Still, Applicants' Specification, Page 31, Lines 12 to 18 appears to define 'cadence' as encompassing accent, intonation, stress, and phoneme duration in a manner similar to prosody, but as a pitch component frequency of an accent, too, at Page 32, Line 10. Specifically, the prior art of record does not disclose using a correlation greater than a predetermined amount between cadence of input sentence information and voice unit data to select voice unit data, but performing missing part synthesis by converting phoneme data when a predetermined condition is

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not met. Applicants' Specification, Page 31, Line 28 to Page 32, Line 11, discloses using a correlation greater than a predetermined amount for selection of voice unit data for cadence. Applicants' Specification, Page 56, Lines 5 to 17, discloses that when a voice unit cannot be selected, the voice unit is synthesized from compressed waveform data representing phoneme fragments that are smaller than a phoneme. The Specification, Page 1, Line 26 to Page 2, Line 20, suggests advantages of producing synthetic speech that sounds more natural at the boundaries between speech data and reduces requirements for storage capacity.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN LERNER whose telephone number is (571)272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Martin Lerner/  
Primary Examiner  
Art Unit 2626  
July 29, 2011